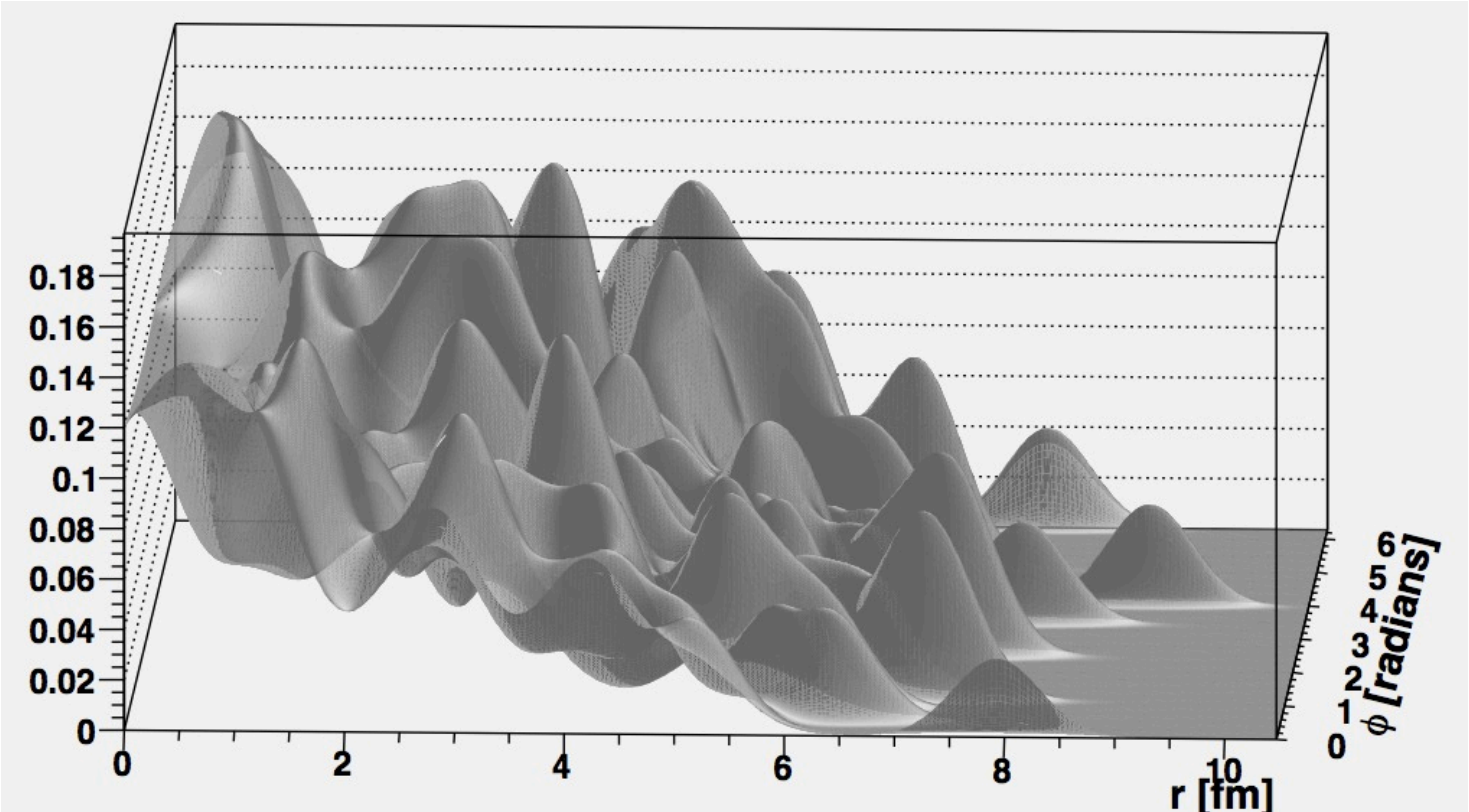
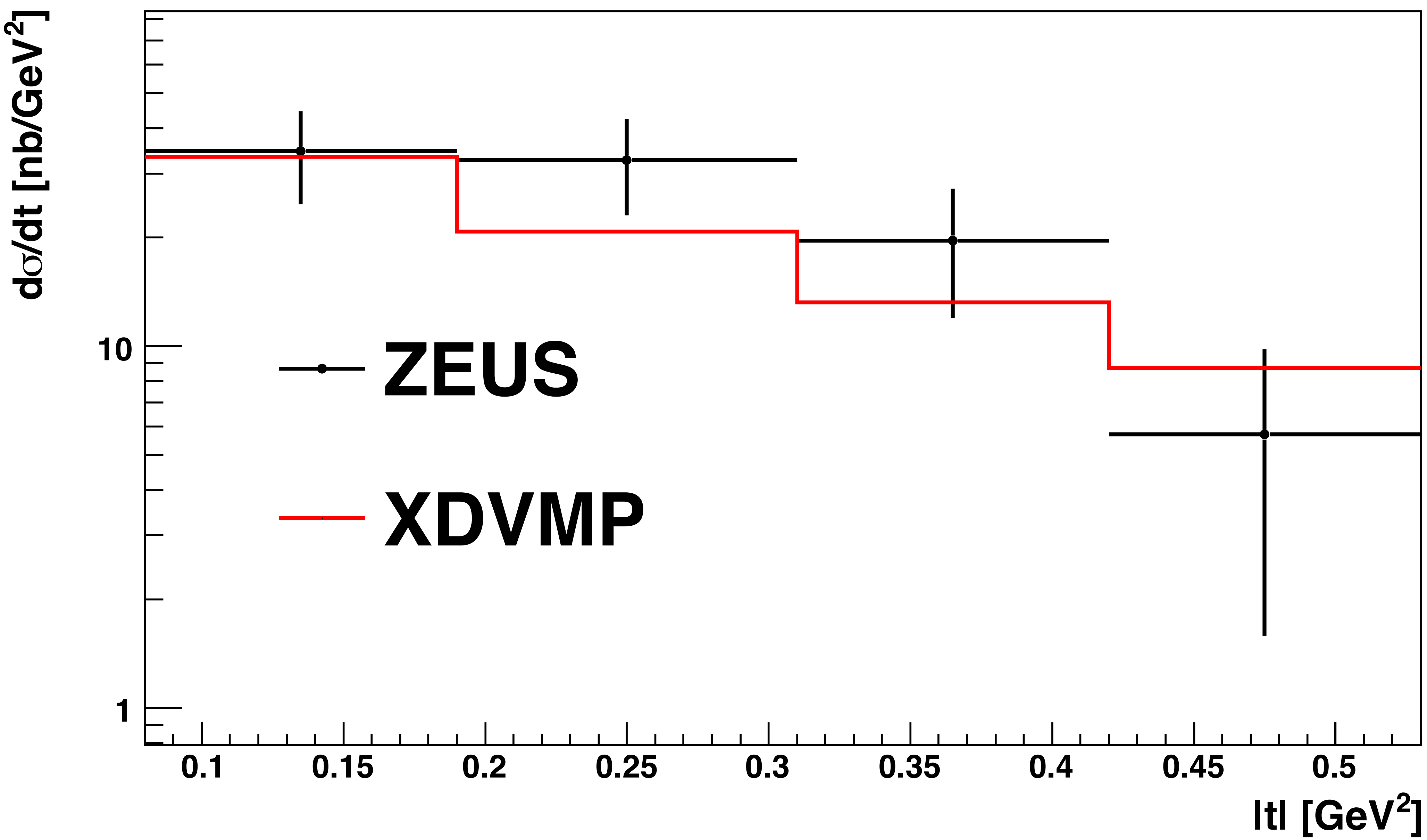
Update on XDVMP for eA

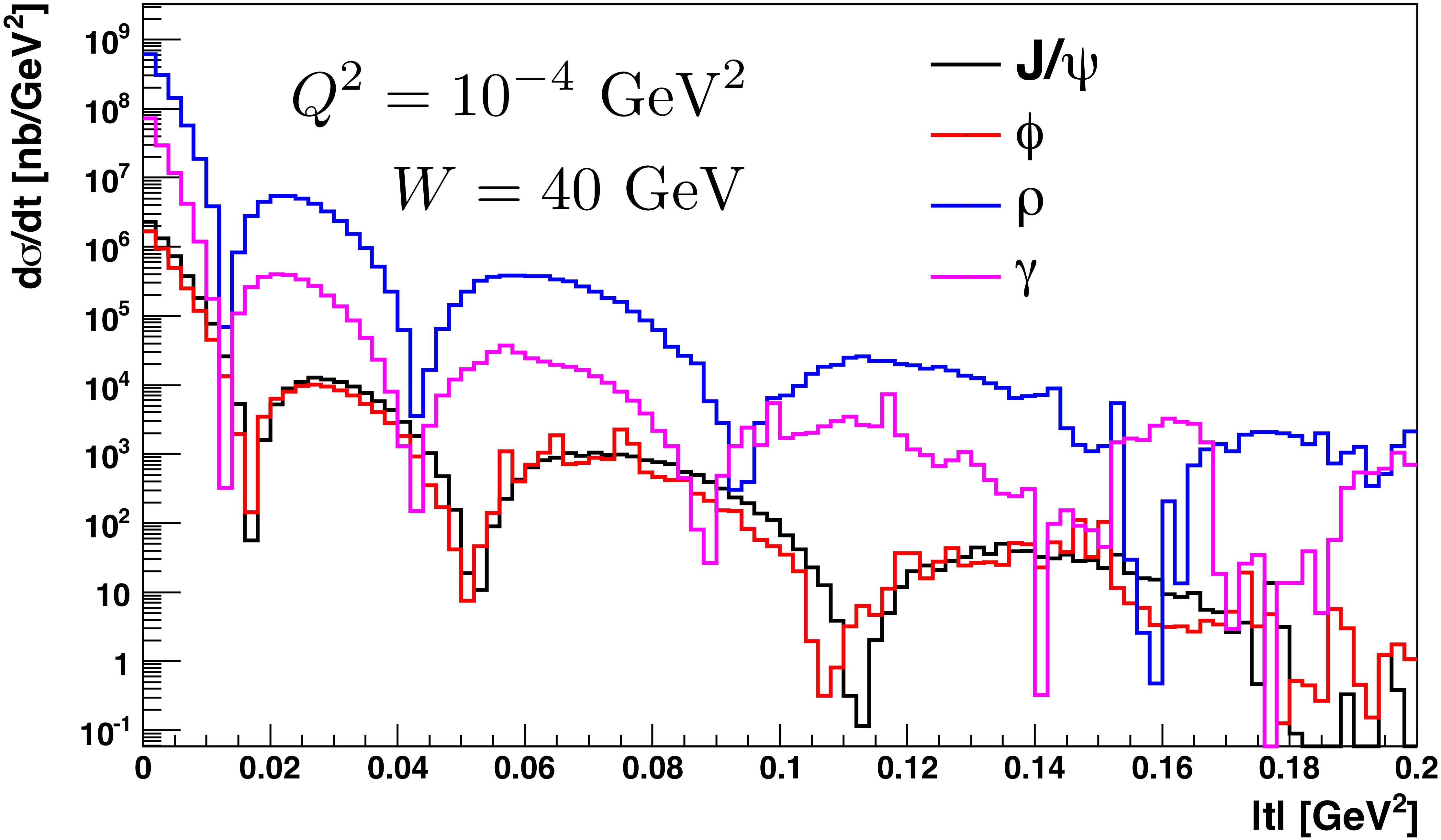


Tobias Toll

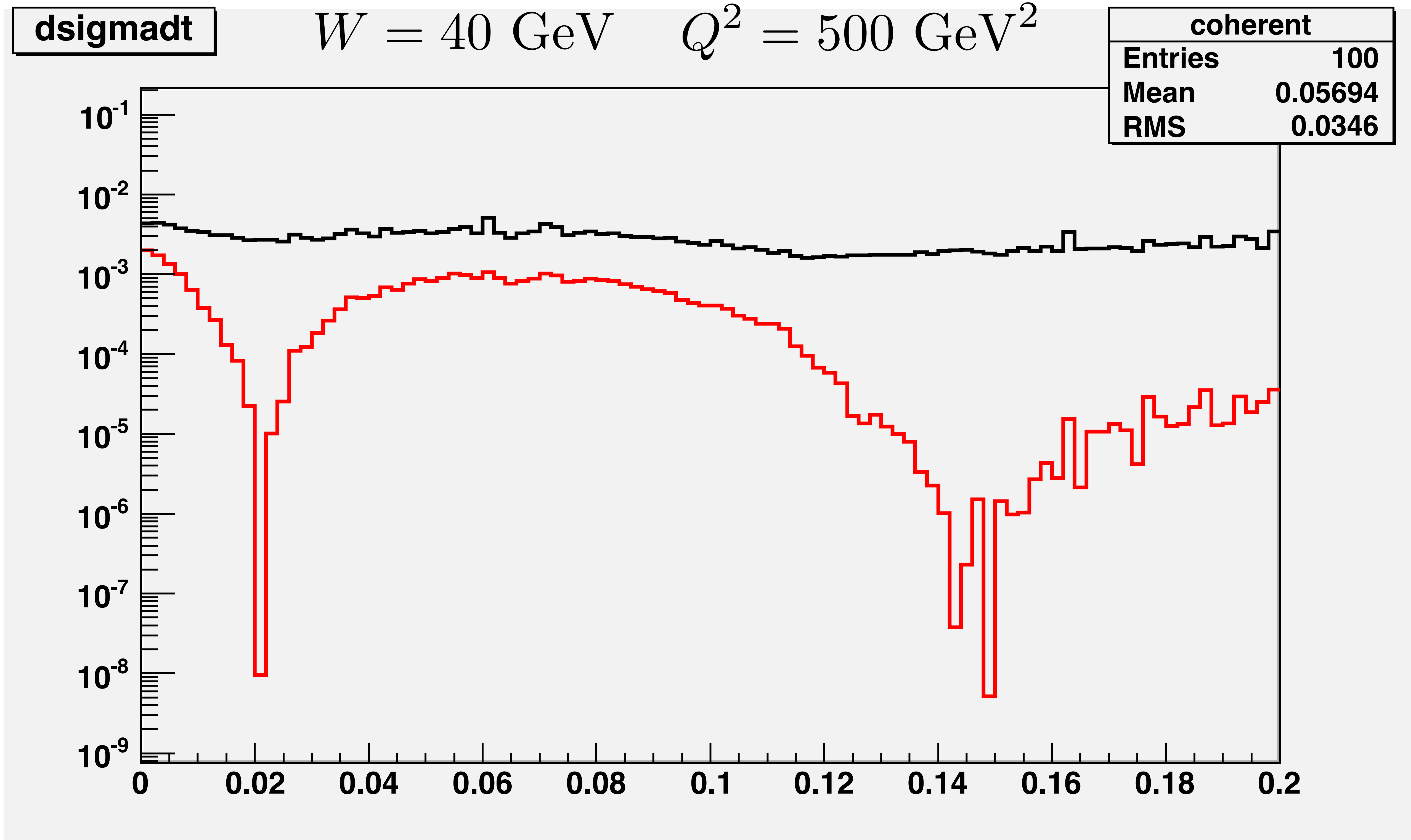
02/17/11

DVCS in ep bCGC

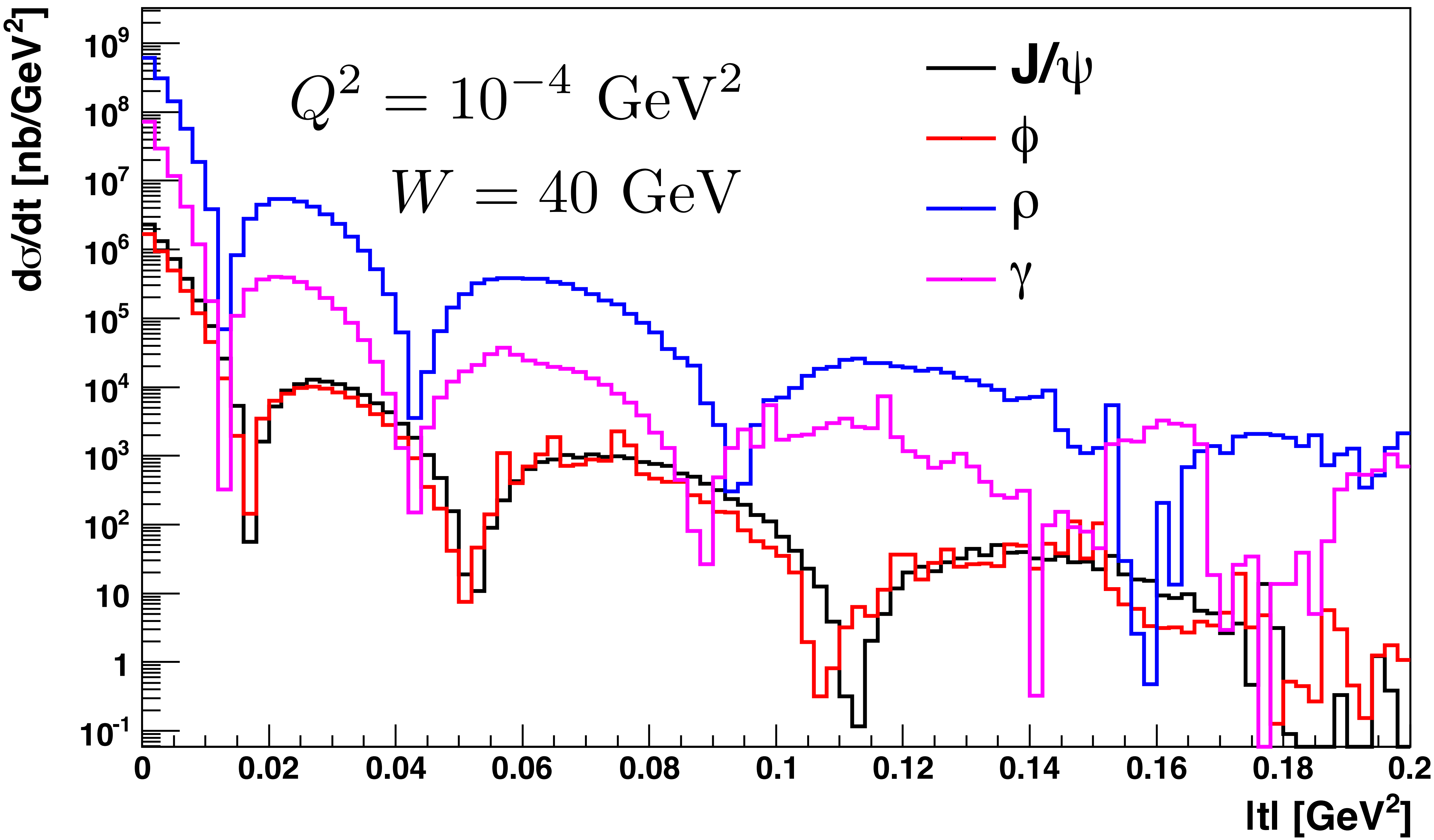




$Q^2 = 10^{-4}$ GeV^2
$W = 40$ GeV
J/ψ
φ
ρ
γ
dσ/dt [nb/GeV^2]
|t| [GeV^2]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
10^9
10^8
10^7
10^6
10^5
10^4
10^3
10^2
10
1
10^{-1}

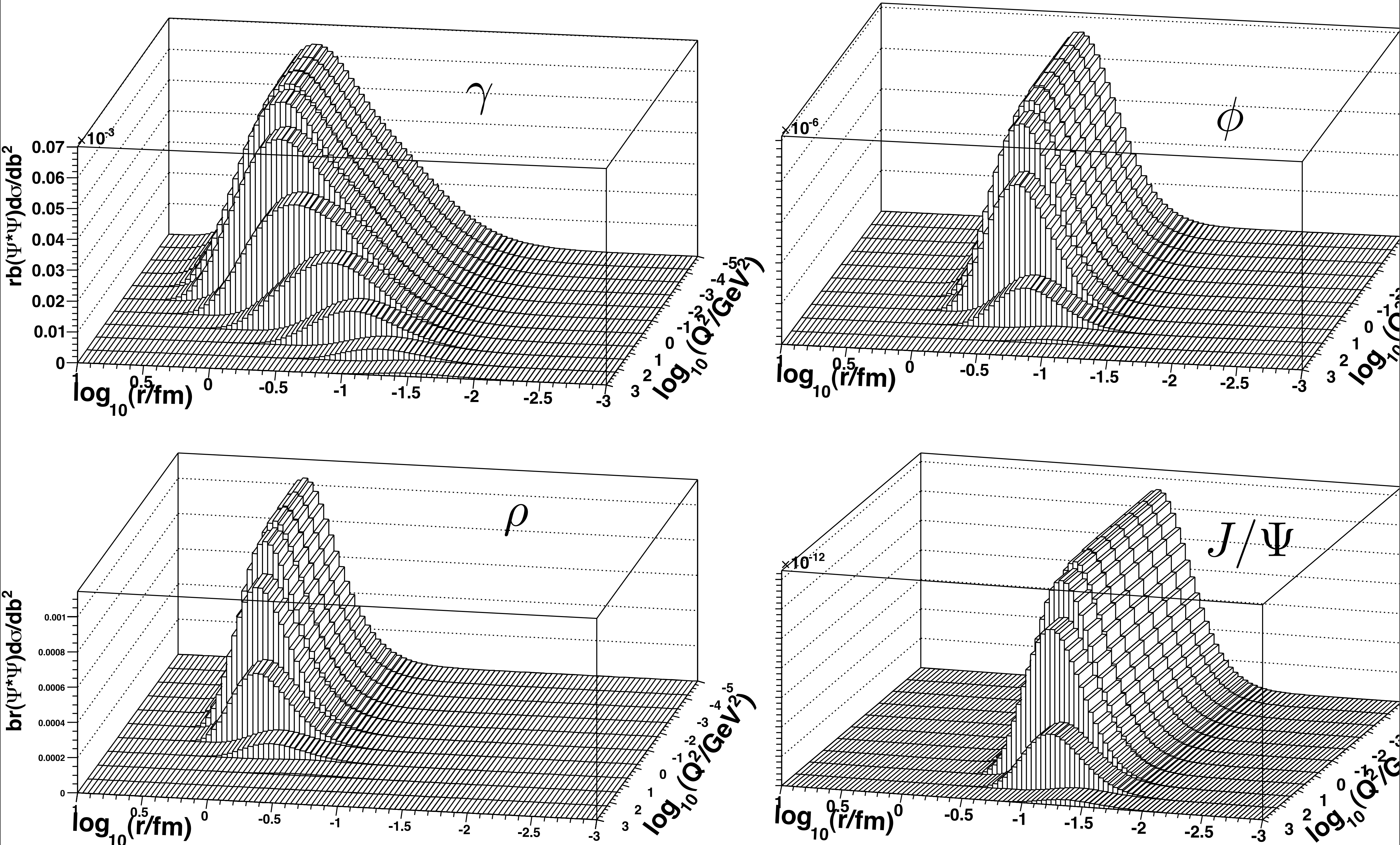


dsigmadt
$W = 40$ GeV $\quad Q^2 = 500$ GeV^2
coherent
Entries 100
Mean 0.05694
RMS 0.0346
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
10^{-9}
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2



$$\mathcal{A} = \int \mathrm{d}r \int \mathrm{d}z \int \mathrm{d}b \int \mathrm{d}\phi$$

$$\frac{1}{2} rb \left(\Psi_V^* \Psi\right)(r,z) \frac{\mathrm{d}^2\sigma_{q\bar{q}}}{\mathrm{d}b\mathrm{d}\phi}(x,r,b,\phi,\Omega) J_0([1-z]r\Delta)\cos(b\Delta\cos\phi)$$



$$\frac{1}{2} rb\left(\Psi_V^*\Psi\right)(r,z)\frac{\mathrm{d}^2\sigma_{q\bar{q}}}{\mathrm{d}b\mathrm{d}\phi}(x,r,b,\phi,\Omega)\, J_0([1-z]r\Delta)\cos(b\Delta\cos\phi)$$

Premature Discussion

For measuring the spacial gluon distribution in nuclei, it's important to minimize the contributions from the term

$J_0([1-z]r\Delta)$ **vs.** $\cos(b\Delta\cos\phi)$

This seems to be possible in kinematic regimes dominated by large r, making the first term oscillate faster than the second term:

DVCS in photoproduction not J/Psi

This is contrary to what Caldwell/Kowalski says in their paper...

and may contradict Thomas' results with the inverse Fourier transform

so: I may very well be wrong

hence: More Investigations needed!!